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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,696	01/22/2004	Jie Liu	134198	3369

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GENERAL ELECTRIC COMPANY  
GLOBAL RESEARCH  
PATENT DOCKET RM. BLDG. K1-4A59  
NISKAYUNA, NY 12309

EXAMINER
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YAMNITZKY, MARIE ROSE

ART UNIT	PAPER NUMBER
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1774

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/761,696

Applicant(s)

LIU ET AL.

Examiner

Marie R. Yamnitzky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-69 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☒ Claim(s) 1-69 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-9, drawn to a charge transfer-promoting material, classified in class 252, subclass 518.1.
- II. Claims 10-20, drawn to an article comprising a metal and a charge transfer-promoting material on the metal, classified in class 428, subclass 457.
- III. Claims 21-39, drawn to an electronic device, classification dependent upon the specific type of electronic device. For example, an organic electroluminescent device is classified in class 313, subclass 504, while an organic photovoltaic cell is classified in class 136, subclass 263. Claims 21, 26, 30, 34 and 37-39 are generic for these two as well as other types of electronic devices.
- IV. Claims 40-45, drawn to a method of making a charge transfer-promoting material, classification dependent upon the specific organic moiety and the specific metal. For example, rare earth metal compounds (wherein M is scandium, yttrium or a lanthanide series metal) are classified in class 534, subclass 15.
- V. Claims 46-69, drawn to a method of making an electronic device, classification dependent upon the specific method steps utilized. For example, the various methods recited in claim 48 are classified in various subclasses in class 427, while a method carried out by laminating as in claim 51 is classified in class 156, subclass 310.

The inventions are distinct, each from the other because of the following reasons:

Inventions of Group IV and Group I are related as process of making and product made. Inventions of Group IV and Groups II and III are somewhat related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by a materially different method such as by reacting a metal halide with an organic moiety selected from the group consisting of fused ring radicals, crown ethers, cryptands, macrocyclic polyamines and derivatives thereof, or by reacting a metal with an organic moiety selected from the group consisting of crown ethers, cryptands, macrocyclic polyamines and derivatives thereof. Further, in the case of Groups II, III and IV, the method as claimed does not directly make the product as claimed, but instead makes a component of the product.

Inventions of Group V and Group III are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by a materially different process such as sputter depositing an electrode, screen printing an electronically active material on the electrode, screen

printing a charge transfer-promoting material on the electronically active material, and spin-coating a second electrode on the charge transfer-promoting material.

Inventions of Group I and Group V are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case, the product as claimed can be used in a materially different process which does not include deposition of electronically active material separate from the charge transfer-promoting material.

Inventions of Group IV and Group V are unrelated. Inventions are unrelated if it can be shown that they are not disclosed as capable of use together and they have different designs, modes of operation, and effects (MPEP § 802.01 and § 806.06). In the instant case, the different inventions are different methods which require different method steps and do not result in the same end product.

Because these inventions are independent or distinct for the reasons given above, have acquired a separate status in the art in view of their different classification, and the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

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Inventions of Groups I, II and III are related in combination/subcombination relationships. These inventions are sufficiently related that the examiner will examine these three Groups together if so elected, subject to the election of species requirements set forth below.

In addition to the preceding restriction requirement, an election of species is required as follows.

With respect to Groups I-V, this application contains claims directed to the following patentably distinct species of charge transfer-promoting material, products containing such materials, and processes of making or using such materials:

- (A) a charge transfer-promoting material of formula AM,
- (B) a charge transfer-promoting material of formula  $AM^{n+}X^{-n}$ ,
- (C) a charge transfer-promoting material of formula  $\{A-R^3\}^{n-}M^{n+}$ ,

wherein the organic moiety A is selected from (i) organic fused ring radicals having from 2 to 5 rings, (ii) crown ethers, (iii) cryptands and (iv) macrocyclic polyamines

wherein metal M is selected from (i) alkali metals, (ii) alkaline-earth metals, and (iii) scandium, yttrium and metals of lanthanide series

wherein  $R^3$  is selected from (i) alkoxy silane, (ii) carboxylic acid, (iii) thiol, (iv) amine, (v) phosphine, (vi) amide, (vii) imine, (viii) ester, (ix) anhydride and (x) epoxy.

With respect to Group III, this application further contains claims directed to the following patentably distinct species:

(D) an electronic device that is an EL device

(E) an electronic device that is a PV device.

With respect to Group V, this application further contains claims directed to the following patentably distinct species:

(F) depositing successive layers of a multilayered device, one upon the other, without formation of two multilayered intermediates

(G) formation of two multilayered intermediates which are laminated together to form the multilayered device.

The species with respect to Groups I-V are independent or distinct because the different species with respect to the charge transfer-promoting material as set forth above do not overlap in scope, i.e., are mutually exclusive.

The species with respect to Group III are independent or distinct because the different species with respect to the type of electronic device have a materially different mode of operation, function, and effect.

The species with respect to Group V are independent or distinct because the different species with respect to the method have a materially different mode of operation.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claims are generic with respect to the different species of charge-transfer promoting material in Groups I-V. Claims 21, 26, 30, 34 and 37-39 are generic with respect to the different species of electronic devices in Group III. No claims are generic with respect to the different species of methods in Group V.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. Regardless of which of Groups I-V is elected in response to the restriction requirement, applicant must make an election of (A), (B) or (C) for the charge transfer-promoting material and make further elections for the organic moiety A and the metal M, and for R if (C) is elected. Applicant is also required to elect an ultimate species (a single, specific material) for the charge transfer-promoting material that will be used as the starting point for search and examination purposes. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).



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Applicant is advised that the reply to this requirement to be complete must include (i) an election of a species or invention to be examined even though the requirement be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.

The election of an invention or species may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse.

Should applicant traverse on the ground that the inventions or species are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions or species to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C.103(a) of the other invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (571) 272-1531. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

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The current fax number for all official faxes is (571) 273-8300. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (571) 273-1531.)

MRY  
March 20, 2006



MARIE YAMNITZKY  
PRIMARY EXAMINER

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